October 1, 2019

Dear Dr. Ho, Dr. Handel and Dr. Kolstad,

I am a fourth year Ph.D. candidate in the Agriculture and Resource Economics department at the University of California, Davis. I have completed the required coursework and passed my qualifying and oral exams. At Davis, my department shares the microeconomic theory and econometrics sequences with the Economics department.

Since receiving my undergraduate degree in mathematics and economics, my research has exclusively considered health and health care. During my master's programs, first in public health and later in economics, I researched the management of Type I Diabetes in college-aged students and examined international programs and cultural beliefs about teenage pregnancy. I have also studied direct-to-consumer advertising of pharmaceuticals, the costs and benefits of the Affordable Care Act, and geographic differences in healthcare spending.

Recently, I have had the opportunity to pursue a joint project with Amitabh Chandra of Harvard and Adam Sacarny of Columbia utilizing Medicare claims data. After helping to guide the choice of question and framework, we are employing the diffusion of robotic surgical systems to discover how technology influences patient allocation, business stealing and welfare for prostate cancer patients. Additionally, I am in discussion with the Chief of Pain Medicine at UC Davis to do research related to non-opioid treatments for pain.

Outside of academia, I have navigated personal health challenges including a successful kidney transplant in 2013. During this time, I continued to pursue my curiosity about health. This culminated in the publication of my book, *Chronic Resilience,* by Conari Press. It is an intimate look at illness from varied patient perspectives and makes clear how vital health information and resources are in patient outcomes.

My unique perspective from inside the health system in addition to my diligence and drive as a Ph.D. candidate make me an ideal participant for the NBER Health Economics Boot Camp. I highly value the opportunity to learn about specialized topics in health economics in this intensive way. My recommendation letter is written by Professor Marianne Bitler, University of California, Davis.

Sincerely,



Danea Horn | 19 Reef Court, Sacramento, CA 95831 | (916) 247-6384 | dmhorn@ucdavis.edu

DANEA HORN, M.A.
University of California, Davis
(916) 247 - 6384 / dmhorn@ucdavis.edu

Research Interests
Information, technology and decision making in health care.

Education

2016 –	Ph.D. Candidate, University of California, Davis Agriculture and Resource Economics
2016	M.A. Economics, California State University, Sacramento
2003	M.P.H. Candidate, University of Northern Colorado
2001	B.S. Mathematics and Economics, Summa Cum Laude, University of Redlands Study Abroad: Salzburg, Austria, Fall 1999

Employment

2018 –	Research Assistant to Professor Marianne Bitler
2018	Teaching Assistant, ARE 121 Agricultural Sustainability
2017	Teaching Assistant, 100A Intermediate Microeconomics
2014 – 2016	Financial Analyst DCA Partners, Sacramento, CA
2009 – 2010	Sr. Financial Analyst, Hanna Andersson, Portland, OR
2008 – 2009	Outlet Planning Manager, Hanna Andersson, Portland, OR
2006 – 2008	Central Planning Manager, Hanna Andersson, Portland, OR
2004 – 2006	Finance Manager, Corman Leigh Communities, Temecula, CA
2001 – 2002	Financial Analyst: DataTech Management, Gardenia, CA
2000	Actuarial Intern, Hewitt Associates, Newport Beach, CA

Publications

2016	*Master's Thesis*: "Is Medicare Spending Efficient? Connecting Expenditures to the Mortality Rate"
2013	*Book:* "Chronic Resilience: 10 Sanity-Saving Tools for Women Coping with the Stress of Illness," Conari Press

Popular -- General Articles Featured at:
Huffington Post, Kevin MD, Health Bistro by Lifescripts, Mind Body Green, RenaLife Magazine, Tiny Buddha, Girls on the Grid, Just B Magazine and Diabetes Health

Website:
Created Chronic Resilience Website, 120+ Posts, over 65 Thousand Views, www.chronicresilience.com

Selected Presentations

2016	"Chronic Resilience," Success Strategies Seminar Series
2015	"Chronic Resilience," Women in Pain Conference, Recovering Grace Foundation
2014	"Chronic Resilience: Changing the Way Patients Approach Healing," The Commonwealth Club
2013	"Writing Through Pain," Guest Lecture, Stanford Continuing Studies

Additional Presentation Clients:
The Sacramento Kings, The Portland Trail Blazers, REST Conference for Finance Professionals, Mary Kay, Sacramento Entrepreneurs Organization, Genentech, State Compensation Insurance Fund, eWomen Network, Young Women Social Entrepreneurs of San Francisco

DANEA HORN, M.A.
University of California, Davis
(916) 247 - 6384 / dmhorn@ucdavis.edu

Media Appearances

Television:

KCRA Sacramento, Fox 40 Sacramento, Good Day Sacramento, San Diego Living, KXLY Spokane, KATU Portland

Radio/Podcasts:

KFBK Sacramento, A Congruent Life, Renal Support Network, Life After Pain, The Dr. Pat Show, Julia Fine on Blog Talk Radio, The Attitude Shift Show

---

Community Involvement

2013 –	Donate Life Ambassador, Sierra Donor Services
2012 –	Renal Support Network Speaker
2012 – 2013	Sacramento Crisis Nursery Volunteer
2009 – 2010	Toastmasters – President
2007 – 2010	Kinship House Board of Directors, Member
2009	Toastmasters Table Topics Contest Winner, Area 73
2008	Toastmasters Evaluation Speech Contest Winner, Downtown Division
2000 – 2001	Professorial Search Committee, Economics Department, Member
2000 – 2001	Professorial Search Committee, Mathematics Department, Member
1999 – 2001	Economic Society – Vice President (1999), President (2000 – 2001)

Honors and Awards

2018	Jastro-Shields Graduate Research Scholarship Award
2018	Summer Travel Grant, Department of Agriculture and Resource Economics
2016 – 2017	Provost Fellowship, University of California, Davis
2001 –	Phi Beta Kappa – Honor Society
2001 –	Omicron Delta Kappa – Honor Society
1997 – 2001	University of Redlands Dean's List
1998 – 2000	University of Redlands Admissions Host
1997 – 2001	President's Scholar, Academic Achievement Award
1997 – 2001	C.E. Towne Scholarship
1997 – 2001	California Masonic Foundation Scholarship
1997	McDonald's Ray A. Kroc Scholarship
1997	Salutatorian – San Marcos High School

Completed Ph.D. Courses

200A	Microeconomic Theory
202A	Applied Research Methods
239	Econometric Foundations
200B	Microeconomic Theory – General Equilibrium
202B	Applied Microeconomics 1
240A	Econometric Methods
200C	Economic Theory – Game Theory
202C	Applied Microeconomics 2
240B	Econometric Methods
231	Product Supply & Demand
240D	Cross Sectional Econometrics
230A	Public Economics
232	Commodity Markets
240C	Time Series Econometrics
230B	Public Economics
233	Agricultural Policy
230C	Public Economics
240F	Topics in Cross Sectional Econometrics

Essay

My life has revolved around the health care system. A birth disorder called VACTERL Association gave me a firsthand look at how physicians, patients, hospitals, insurance companies and government aid work in concert to produce health. In 2013, Conari Press published my book, *Chronic Resilience*, which was an examination of the patient experience. Through the writing process and subsequent speaking engagements, I have heard stories of diagnosis and misdiagnosis, treatment advancements and the lack thereof, choices to end treatment and decisions to go to extreme lengths for a better quality of life. As individualized as these experiences seemed, there was always a common thread that revolved around information and resources.

I pursued a Ph.D. to gain the analytic tools that would enable me to go further with understanding interactions between health and other areas of economics particularly industrial organization, market failures and behavioral economics. Attending the NBER Health Economics Boot Camp will further expand my toolkit by hearing from the most accomplished economists in the field, a group I will one day be a part of. My unique background from within health care prompts me to read health economics with an additional lens that helps challenge assumptions, find endogeneity and assess validity. This asset makes me an active participant in reading health economics literature and is the perspective I will bring to the bootcamp.

Over the years, I have studied a variety of topics in health care. Recently my focus has been honed, and I am inspired to investigate the role information plays in health systems and health outcomes. My intention is to spend the remainder of my career in academia, committed to describing the complex relationships that revolve around health information. I have made strides in connecting with academic health care providers and health economists which have motivated and informed my research.

I currently have three projects in process toward my dissertation. The first is joint work with Amitabh Chandra, Harvard, and Adam Sacarny, Columbia. This project considers the role technology adoption plays in patient allocation and business stealing in hospital markets. Technology is observable, marketed and may be used as a signal of quality in hospital care. If patient demand and business stealing have created a proliferation of technology in hospitals, following from Mankiw and Whinston (1986)[1], there may be a gap between the market-level equilibrium of technology adoption and the socially optimal level. Medicare data and the

[1] Mankiw, G., and Whinston, M. (1986). "Free entry and social inefficiency." Rand Journal of Economics: Vol. 17, pp. 48-58.

diffusion of robotic surgical systems are used to investigate this hypothesis. Initial results confirm that prostate cancer patients use robotics as a signal of provider quality and allocate at higher rates to hospitals that have adopted robotics, but increases are partially offset by competitors who also adopt.

The second project models advertising in pharmaceutical markets after patent expiration. Brand-name pharmaceutical companies utilize direct-to-consumer advertising (DTCA) and physician advertising (detailing) during the patent protection period. As the drug nears the end of this protection, generic manufacturers observe market conditions and make an entry decision. Previous research has modeled the impact of detailing on the entry decision of generic manufacturing firms[2]. I am building on this research to include DTCA, in addition to detailing, in a vertical differentiation model to assess the decision of a generic manufacturer to enter the market. I hypothesize that, past a certain threshold, detailing serves as an entry deterrent while any amount of DTCA promotes generic entry and raises prices. Hence, brand-name firms that invest in DTCA during the patent-protection period face increased generic entry after patent-expiration but also benefit from higher prices during, and after, patent protection. My hypothesis will be tested using data simulations.

My final project considers how negative health information impacts health behavior. Research by Oster (2018)[3] and Zhao et al. (2013)[4] have shown that receiving negative health information has a small impact on food choice and calorie consumption. The reasoning for the small response has been hypothesized as monetary resource constraints, knowledge constrains or selection into diagnosis based on prior lifestyle choices. My proposal is to investigate how a diagnosis of high cholesterol impacts food choice, body mass index and stress. My hypothesis is that the impact of negative health information on dietary changes is mitigated by increases in stress from diagnosis.

I value the opportunity the NBER Health Economics Bootcamp provides. My life has been committed to health care, and I want to honor the passion and determination I have to push this discipline forward. Unquestionably, that begins with learning from those on the forefront of discovery.

[2] Königbauer, I. (2007). "Advertising and generic market entry." Journal of Health Economics, Volume 26, Issue 2, Pages 286-305, ISSN 0167-6296. https://doi.org/10.1016/j.jhealeco.2006.08.008.
[3] Oster, E. (2018). "Diabetes and Diet: Purchasing Behavior Change in Response to Health Information." American Economic Journal: Applied Economics. Vol 10, No. 4. pp. 308-48.
[4] Zhao, M., Konishi, Y., Glewwe, P. (2013). "Does information on health status lead to a healthier lifestyle? Evidence from China on the effect of hypertension diagnosis on food consumption." Journal of Health Economics, 32: 367– 385.

UNIVERSITY OF CALIFORNIA, DAVIS
BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO
SANTA BARBARA • SANTA CRUZ

Professor
Department of Economics
UC Davis
1 Shields Avenue
Davis, CA 95616
(415) 305-5644
bitler@ucdavis.edu

Selection committee
Health Economics Boot Camp, NBER
October 9, 2019

Dear Kate, Ben, and Jon:

This letter is in support of Danea Horn's application for the Health Economics Boot Camp. I nominated her for this workshop last year as well and hope she might get a slot this time. I begin by explaining how I know Danea. Then I will discuss why I think you should include her in this workshop. I first met Danea who is a student in the Agricultural and Resource Economics Department at UC Davis when she enrolled in my PhD level applied econometrics class (listed as public economics). We have a 3-quarter sequence in public and labor economics, but the fall quarter of both is my class which is more methods oriented (applied econometrics for reduced-form questions). Danea did well in the class, and importantly also revealed her interest in health. She took the second quarter of public economics with my colleague, Monica Singhal, who also encouraged her interest in health economics. Finally, given my experience with her, I hired her as an RA and she has been working for me ever since. She is everything you want in an RA, and also keeps her focus on her own interests. In fact, Kitt Carpenter and I have since added her as a coauthor to a project on colon cancer screenings.

Here in the economics department at UC Davis, we do not really cover health economics well (some might say at all) at the graduate level. Despite my being a coeditor at *AJHE*, as you undoubtedly know my research is more on health outcomes as a function of policy, health behaviors, or effects of health insurance mandates. And the ARE department has only Tim Beatty looking at health. There are some health economists in the medical school, but they focus on cost-effectiveness. My department's IO faculty are quite focused on energy and environment, and the IO focus in the ARE department is, quite naturally, agriculture. Further, our department does not have public/labor people doing structural work. Thus, someone like Danea who is very interested in health economics has to be entrepreneurial. And she has been. After meeting with Amitabh Chandra who came through for a seminar, she reached out to him, offering to work for free for the summer for the opportunity to learn from him. This has led to her being a coauthor on a paper with Amitabh and Adam Sacarny. Their project uses Medicare claims data to study how technology adoption affects where patients go for care and facilitates poaching market share. The premise is that technology may be taken as a signal of quality by patients. In particular, they are focusing on hospital's adoption of robotic surgery and whether it affects where prostate cancer patients go for surgery. A second paper extends existing work on generic entry in pharmaceutical markets to incorporate both direct to consumer advertising and detailing in a model of vertical differentiation. Finally, she is exploring a third project on the effects of health diagnoses on health outcomes.

Danea is in her fourth year at UC Davis. This boot camp would catch Danea up on both literature and methods that are hard to find at UC Davis. As someone who never had a formal health economics class, I think there is great value to learning these topics from the perspective of researchers firmly grounded in health economics. I would also say that Danea is very driven by her research interests and deserves a chance to learn health economics from the top scholars. She is one of the stronger students I have interacted with here at UCD. Please give her serious consideration.

Feel free to contact me if you need further information.

Best,



Marianne Bitler